UNITED STATES PATENT AND TRADEMARK OFFICE

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10/607,577	06/25/2003	Paul St. John Brittan	B-5134 621037-8	5778

7590 09/07/2007	EXAMINER
HEWLETT-PACKARD COMPANY	WOZNIAK, JAMES S
Intellectual Property Administration	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 June 2007</u>.

2a)☒ This action is **FINAL**.　　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 June 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All　b)☐ Some * c)☐ None of:

　　　1.☒ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   In response to the office action from 2/5/2007, the applicant has submitted an

amendment, filed 6/4/2007, amending independent claims 1 and 10 to add steps of receiving

inputs regarding usage of different input modalities, confidence in results, and/or pragmatic

information on modality usage, determining a target relative usage of a resource, and processing

an input modality based on an allocated resource, while adding new claims 19 and 20 and

arguing to traverse the art rejection based on the limitation regarding allocating resources based

on one of: actual usage of different input modalities, confidence in results, or pragmatic

information on modality usage *(Amendment, Pages 11-12)*. The applicant's arguments have been

fully considered but are moot with respect to the new grounds of rejection, necessitated by the

amended claims and further in view of Suhm et al *("Multimodal Error Correction for Speech*

User Interfaces, 2001).

2.   In response to amended Fig. 2, the examiner has withdrawn the previous drawing

objections.

3.   In response to amended claims 1 and 10, the examiner has withdrawn the previous claim

objections directed towards minor informalities.

4.   In response to amended claims 1 and 10 and corresponding arguments *(Amendment,*

Pages 10-11), the examiner has withdrawn the previous 35 U.S.C. 112, second paragraph

rejections.

5.   In response to amended claims 1 and 10 and associated arguments *(Amendment, Page*

11), the examiner has withdrawn the previous 35 U.S.C. 101 rejection.

Response to Arguments

6.   Applicant's arguments have been fully considered but they are not persuasive for the

following reasons:

With respect to **Claims 1 and 10**, the applicant argues that Maes et al *(U.S. Patent:*

6,964,023) is only concerned with keeping "a dialog flowing" and does not anticipate allocating

a resource based on one of: the actual usage of different input modalities by a device user,

confidence in results, or pragmatic information on input modality usage *(Amendment, Pages 11-*

12).

In response, the examiner points out that Maes explicitly teaches resource allocation in a

multi-modal input system. More specifically, Maes discloses a resource manager that prioritizes

allocation of CPU cycles or input/output priorities *(i.e., resources and resource allocation) (Col.*

37, Lines 4-16). In Maes, resource allocation is performed based on the modality engines that

are engaged *(i.e., actual usage of the different input modalities by the user of the device)* and

modality capabilities and network path usage/delay *(i.e., pragmatic information on input*

modality usage) (Col. 37, Lines 4-16). By the disclosed "keeping a dialog flowing" argued by

the applicant, Maes is simply referring to allocating resources to active modality engines *("the*

engines engaged for recognizing or processing a current input or output have priorities," Col.

37, lines 4-16) so processing speed can be appropriately maximized *(i.e., avoiding delays or*

"keeping a dialog flowing") for a most utilized/active user input modality. Thus, the examiner

notes that Maes anticipates the aforementioned claim limitation.

The art rejection of the dependent claims is traversed for reasons similar to claims 1 and

10 *(Amendment, Page 12).* In regards to such arguments, see the above response to the

arguments directed towards claims 1 and 10.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

8.   **Claims 1, 3, 9-10, 12, and 18-20** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Maes et al *(U.S. Patent: 6,964,023)* in view of Suhm et al *("Multimodal Error*

Correction for Speech User Interfaces, 2001).

With respect to **Claims 1 and 10**, Maes discloses:

A method and system for dynamically controlling usage of a resource by task entities

respectively involved in processing different input modalities comprising:

Receiving inputs regarding: input mode usage by a user of the data processing device,

modal requirements of a dialogue manager and an application or service at a bandwidth

moderator *(resource manager that receives inputs regarding engaged input modalities and*

associated dialog applications, modality capabilities/states, and network path delay, Col. 37,

Lines 4-16);

Determining a target relative usage of a data-processing resource *(determining required*

CPU cycles or input priorities to maintain a flowing dialog with an active application, Col. 37,

Lines 4-16);

Wherein the relative average actual or allocated usage of the resource by the data-

processing entities is dynamically allocated by said bandwidth moderator according to one or

more of the following: actual usage of the different modalities by a user; confidence in the results

of processing of each of the modalities; pragmatic information on input modality usage

(allocating computer processing resources based on in use (active) modality engines, modality

capabilities, and network delay, Col. 37, Lines 4-16; and Col. 35, Line 54- Col. 36, Line 7); and

Processing at least one of the input modalities using the resource as dynamically

allocated by the bandwidth moderator *(modality engines for processing/recognizing a user input*

by utilizing a prioritized resource, Col. 37, Lines 4-16).

Maes further discloses multiple applications associated with various modalities and a

corresponding computer processor *(Col. 7, Lines 40-45; Col. 31, Lines 15-34; and Col. 45, Lines*

17-44).

Maes does not specifically suggest receiving a confidence score in a recognition process

for resource allocation *(i.e., "and/or confidence in a recognition process")*. Suhm, however,

recites using confidence scores to identify recognition errors and switch to another modality *(i.e.,*

activating processing resources for a different input modality) (Pages 68, 71, 74-75, and 94).

Maes and Suhm are analogous art because they are from a similar field of endeavor in

systems having multimodal input processing. Thus, it would have been obvious to a person of

ordinary skill in the art, at the time of invention, to modify the teachings of Maes with the

confidence metric for resource allocation switching taught by Suhm in order to speed up

correction of recognition errors *(Abstract, Page 60).*

With respect to **Claims 3 and 12**, Maes further discloses:

The resource is processing power *(computer processing power allocated to active*

modality engines, Col. 37, Lines 4-16).

With respect to **Claims 9 and 18**, Maes further recites:

Controlling the allocation of the resource between task entities *(allocating computer processing*

resources based on in use (active) modality engines associated with a particular application,

Col. 37, Lines 4-16; and Col. 35, Line 54- Col. 36, Line 7).

With respect to **Claims 19-20**, Maes discloses resource allocation based on data received

at a resource manager comprising: engaged input modalities *(actual usage of the different input*

modalities) and modality capabilities/states and network path delay *(pragmatic information on*

input modality usage), while Suhm discloses using confidence scores to identify recognition

errors and switch to another modality, as both applied to Claims 1 and 10. Also, Maes only

requires only one of the aforementioned items for resource allocation at a resource manager *(Col.*

37, Lines 4-16).

9.   **Claims 2, 4-8, 11, 13-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Maes et al in view of Suhm et al and further in view of Bridger et al *(WO 01/35575 A2)*.

With respect to **Claims 2, 4, 11, and 13**, Maes in view of Suhm discloses the system and

method for allocating computer processing resources based on modality usage as applied to

Claims 1 and 10. Maes further discloses multiple applications associated with various modalities

(Col. 7, Lines 40-45; and Col. 31, Lines 15-34). Maes in view of Suhm does not explicitly

suggest resources comprising communication bandwidth and memory, however Bridger

discloses such resource allocation *(Page 1, Line 32- Page 2, Line 10; and Page 7, Lines 15-29)*.

Maes, Suhm, and Bridger are analogous art because they are from a similar field of

endeavor in processing for multiple input data types. Thus, it would have been obvious to a

person of ordinary skill in the art, at the time of invention, to modify the teachings of Maes in

view of Suhm with the resource management scheme taught by Bridger in order to prevent a

server from overload while not wasting its usage *(Bridger, Page 1, Lines 19-30)*.

With respect to **Claims 5 and 14**, Bridger further discloses processing resources

determined based on an input modality, wherein a single processing resource can be assigned to

different modality types *(Page 7, Lines 7-29)*.

With respect to **Claims 6 and 15**, Bridger further recites the adjustment of related

resources *(Page 7, Line 30- Page 8, Line 4)*.

With respect to **Claims 7 and 16**, Bridger further recites an allocation of resources based

on a modality *(Page 7, Lines 7-14)* and further allocation for similar modality types *(Page 10,*

Lines 3-12).

With respect to **Claims 8 and 17**, Bridger further recites evenly dividing resources for all high priority tasks *(Page 9, Lines 11-23)* and further allocation for similar modality types *(Page 10, Lines 3-12)*.

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Brittan et al *(U.S. Patent: 6,725,199)*- discloses a system that changes the type of synthesis engine in the event of low confidence scores.

Bourguet et al *(U.S. Patent Application Publication: 2002/0178344)*- teaches a

multimodal management system that switches to a different input modality in response to low

confidence scores.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632.

The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
8/2/2007

PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER